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THIS ISSUE

Psychiatric Evaluations and Thoracic Outlet Syndrome (TOS)

This *Provider Bulletin* contains revised treatment criteria for **Thoracic Outlet Syndrome (TOS)**. These TOS criteria replace the criteria previously published Provider Bulletin 92-01.

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CRITERIA #5
THORACIC OUTLET SYNDROME (TOS)
REVISED CRITERIA

Replaces previously published criteria found in *Provider Bulletin 92-01*.

As approved by the Washington State Medical Association (WSMA)
Industrial Insurance and Rehabilitation Committee, March 1995

CRITERIA NUMBER 5
THORACIC OUTLET SYNDROME (TOS)*
CLINICAL FINDINGS NEEDED FOR TOS SURGERY

TYPE OF TOS	SUBJECTIVE	AND	OBJECTIVE	AND	IMAGING
VASCULAR TOS ARTERIAL	At least <u>three</u> of the following must be present in the affected upper extremity: A. Pain B. Swelling or heaviness C. Decreased temperature or change in color D. Paresthesias in the ulnar nerve distribution		At least <u>one</u> of the following: A. Pallor or coolness B. Gangrene of the digits in advanced cases		C. Abnormal arteriogram
.....					
VASCULAR TOS VENOUS	At least <u>three</u> of the following must be present in the affected upper extremity: A. Pain B. Swelling or heaviness C. Decreased temperature or change in color D. Parasthesias in the ulnar nerve distribution		At least <u>two</u> of the following: A. Swelling of the arm, B. Venous engorgement C. Cyanosis		D. Abnormal venogram
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NEUROGENIC TOS	In the affected upper extremity: A. Pain <i>and</i> B. Numbness or paresthesias in the ulnar nerve distribution		In the affected upper extremity, <u>all of the</u> following electrodiagnostic abnormalities must be found: A. Reduced amplitude median motor response <i>and</i> B. Reduced amplitude ulnar sensory response <i>and</i> C. Denervation in muscles innervated by lower trunk of the brachial plexus		
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- * 1. The clinical findings in TOS may be similar to those in carpal tunnel syndrome, ulnar neuropathy or cervical radiculopathy. A physician should consider these alternative diagnoses before requesting TOS surgery.
2. Most patients with TOS have cervical ribs.
3. The Department of Labor and Industries has recently concluded a retrospective study of outcomes of thoracic outlet surgery on patients with Labor and Industries claims. The results indicate that long-term outcomes after TOS surgery are worse than outcomes with medical management of TOS.

SEE NEXT PAGE FOR DETAILS OF CRITERIA

CRITERIA FOR THE ELECTRODIAGNOSTIC DIAGNOSIS OF UNILATERAL NEUROGENIC THORACIC OUTLET SYNDROME (TOS)^{^^}

All 3 of the following criteria must be found in the affected limb:

1. Amplitude of median motor response is reduced
AND
2. Amplitude of ulnar sensory response is reduced
AND
3. Needle exam shows denervation in muscles innervated by lower trunk of brachial plexus.

Details Regarding the Above Noted Criteria:

Criterion #1

- a) Using standard surface electrodes with active pick up over the abductor pollicis brevis, the amplitude of the median motor response on the affected side should be less than 50% of that obtained on the unaffected side.

Criterion #2

- a) Using standard ring electrodes on the fifth digit, the ulnar sensory amplitude on the affected side should be less than 60% of the amplitude on the unaffected side.

Criterion #3

- a) Muscles innervated by the lower trunk of the brachial plexus include the abductor pollicis brevis, pronator quadratus, flexor pollicis longus, first dorsal interosseous, abductor digiti minimi, flexor carpi ulnaris, extensor pollicis brevis, and extensor indicis.
- b) EMG abnormalities in TOS are most commonly seen in median and ulnar innervated intrinsic muscles of the hand—especially the abductor pollicis brevis.
- c) Positive waves and fibrillations may be found, but chronic denervation changes are more common—that is, increased motor unit amplitude, increased motor unit duration, and decreased recruitment with rapid firing of motor units that are activated.

Notes

The electromyographer should rule out neuropathic conditions that might mimic TOS, specifically cervical radiculopathy, carpal tunnel syndrome, ulnar neuropathy and polyneuropathy.

^{^^}Abstracted from Wilbourn, A.J. American Association of Electromyography and Electrodiagnosis. Case Report #7: True Neurogenic Thoracic Outlet Syndrome. 1992.

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